Data Preprocessing

- What variable(s) are the target(s) for your model?
    - The target variable is the 'IS_SUCCESSFUL' column from the 'application_df' dataset.
- What variable(s) are the features for your model?
    - The feature variables consist of all columns in 'application_df' except for the 'IS_SUCCESSFUL' column. These features were determined by removing the 'IS_SUCCESSFUL' column from the original dataset.
- What variable(s) should be removed from the input data because they are neither targets nor features?
    - The 'EIN' and 'NAME' columns were removed from the input data as they did not serve as either target or feature variables in the dataset.

Compiling, Training, and Evaluating the Model

- How many neurons, layers, and activation functions did you select for your neural network model, and why?
    - In my initial attempt, I selected 8 neurons for the first hidden layer and 5 neurons for the second hidden layer somewhat arbitrarily. These choices were made as starting points for experimentation in subsequent iterations of the model.
- Were you able to achieve the target model accuracy ?
    - Unfortunately, I did not achieve the target model accuracy of 75%.
- What steps did you take in your attempts to increase model performance?
    - To improve model performance, I employed several strategies:
        i. I experimented with adding more layers to the neural network.
        ii. I removed additional columns from the input data.
        iii. I increased the number of hidden nodes in some layers.
        iv. I explored different activation functions for each layer.
        v. I conducted these iterations in an effort to attain higher model accuracy.

In summary, the deep learning model achieved an accuracy rate of approximately 73% when addressing the classification problem. It is conceivable that employing a model with stronger correlations between input and output could yield improved prediction accuracy. This enhancement may be accomplished through more comprehensive initial data preprocessing and the exploration of alternative activation functions, with an iterative approach to refining the model until higher accuracy levels are attained.